DETERMINATION OF PHENOL IN WASTEWATER SAMPLE BY USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

NURUL KUDSIAH BINTI HJ KATEMON

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Universiti Teknologi MARA

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This Final Year Project Report entitled **"Determination of Phenol in Wastewater Sample by using High Performance Liquid Chromatography (HPLC)"** was submitted by Nurul Kudsiah Katemon, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by

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Nor Monica Ahmad
Supervisor
B.Sc (Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

_____

Nurul Huda Abdul Halim
Project Coordinator
B.Sc (Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

_____

Mazni Musa
Head of Programme
B.Sc(Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Date: _____

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ABSTRACT

DETERMINATION OF PHENOL IN WASTEWATER SAMPLE BY USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

The presence of phenol in water is risky to living organism as the toxicity effect causes the long-term exposure. In this research, the analysis was accomplished on a C18 column with UV-Vis detector (HPLC-UV) for determination of phenol in wastewater water while the solid phase extraction (SPE) is used as sample preparation technique. Five mL of load sample was used as the optimized variable in SPE while 0.75 mL/min was used as flow-rate on eluent in HPLC. The analytical method was validated according to the following parameter, which are precision, linear range, limit of detection (LOD), and limit of quantitation (LOQ). A good linear correlation coefficient with $R^2 = 0.9991$ was observed over the range of 3.05 to 30.0 μg/mL. The limit of detection was calculated to be 0.41 μg/mL, while the limit of quantitation value of the validated method was measured to be 1.37 μg/mL. Good recoveries were obtained in the range between 90 to 120%. In conclusion, the proposed method was found to be appropriate and accurate for the determination of phenol in wastewater by using HPLC.